UNITED STATES PATENT AND TRADEMARK OFFICE

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EXAMINER
TERMANINI, SAMIR

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	10/734,305	WANG ET AL.
	Examiner	Art Unit	
	Samir Termanini	2178	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 March 2008*.
2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9,11-22,24-36,38-46 and 48-52* is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) *1-9,11-22,24-36,38-46 and 48-52* is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☒ The drawing(s) filed on *15 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a)☐ All b)☐ Some * c)☐ None of:
      1.☐ Certified copies of the priority documents have been received.
      2.☐ Certified copies of the priority documents have been received in Application No. _____.
      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

BACKGROUND

1.   This Final Office Action is responsive to the following communications: Amendment filed on 8/2/2007.

2.   Claims 1-9,11-22,24-36,38-46 and 48-52 are pending in this case. Claims 10, 23, 37 and 47 are canceled. Claims 49-52 are new. Claims 1, 17, 29, and 41 are in independent form.

RESPONSE TO AMENDMENT

3.   Applicant's Amendment to the Abstract obviates the Objections made by the Examiner in the previous Office Action (Mail dated: 10/18/2007) with respect its length. The Objection to the Abstract is withdrawn.

4.   Arguments (filed on 3/18/2008) concerning the Examiner's Rejections of claims 1-48 made under 35 U.S.C. §102(e) in the previous Office Action (Mail dated: 10/18/2007) have been fully considered but are not persuasive. The rejections are maintained, for the reasons provided hereunder.

CLAIM REJECTIONS-35 U.S.C. § 102

5.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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(e) the invention was described in (1) an application for patent,
published under section 122(b), by another filed in the United
States before the invention by the applicant for patent or (2) a
patent granted on an application for patent by another filed in
the United States before the invention by the applicant for
patent, except that an international application filed under the
treaty defined in section 351(a) shall have the effects for
purposes of this subsection of an application filed in the United
States only if the international application designated the United
States and was published under Article 21(2) of such treaty in
the English language.
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6.   **Claims 1-9,11-22,24-36,38-46 and 48-52** are rejected under 35 U.S.C.

102(e) as being anticipated by Edwin A. Suominen (US Pre-Grant Publication

2003/0055655 A1)(hereinafter *Suominen*).

I.   Citation of Prior Art

A reference to specific paragraphs, columns, pages, or figures in a cited prior art

reference is not limited to preferred embodiments or any specific examples[1]. It is well

settled that a prior art reference, in its entirety, must be considered for all that it

expressly teaches and fairly suggests to one having ordinary skill in the art[2]. Stated

differently, a prior art disclosure reading on a limitation of Applicant's claim cannot be

ignored on the ground that other embodiments disclosed were instead cited. Therefore,

the Examiner's citation to a specific portion of a single prior art reference is not

intended to exclusively dictate, but rather, to demonstrate an exemplary disclosure

commensurate with the specific limitations being addressed.

II.   General Discussion of the Applied Prior Art.

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[1] *In re Heck,* 699 F.2d 1331, 1332-33, 216 USPQ 1038, 1039 (Fed. Cir. 1983) (quoting *In re Lemelson,* 397 F.2d 1006, 1009, 158 USPQ 275, 277 (CCPA 1968).
[2] *Upsher-Smith Labs. v. Pamlab, LLC,* 412 F.3d 1319, 1323, 75 USPQ2d 1213, 1215 (Fed. Cir. 2005); *In re Fritch,* 972 F.2d 1260, 1264, 23 USPQ2d 1780, 1782 (Fed. Cir. 1992); *Merck & Co. v. Biocraft Labs., Inc.,* 874 F.2d 804, 807, 10 USPQ2d 1843, 1846 (Fed. Cir. 1989); *In re Fracalossi,* 681 F.2d 792, 794 n.1, 215 USPQ 569, 570 n.1

Suominen teaches different multiple types of message recognition using a shared language model. Message recognition performed responsive to a first type of message input (e.g., speech), to provide text data in accordance with both the shared language model and a first model specific to the first type of message recognition (e.g., an acoustic model). Message recognition of a second type is performed responsive to a second type of message input (e.g., handwriting), to provide text data in accordance with both the shared language model and a second model specific to the second type of message recognition (e.g., a model that determines basic units of handwriting conveyed by freehand input). Accuracy of both such message recognizers can be improved by user correction of mistakes in recognition by either one of them.

III.   Prior Art Anticipation of Claimed Limitations.

As to independent **claim 1**, *Suominen* describe(s): A method comprising: receiving electronic ink input ("...freehand input to generate and edit text data...," para. [0041]); generating a list of machine-generated text candidates based on the electronic ink input ("...text that has been generated (erroneously) by a message recognizer...," para. [0130]), the list including a first machine-generated text candidate and alternative machine-generated text candidates ("...a list of alternative text comparable to the selection is provided...," para. [0132]); converting the electronic ink input to the first machine-generated text candidate ("...shown by way of example in TABLE IV and TABLE V...," para. [0132]); displaying the first machine-generated text candidate ("...displayed list of alternative text ...," para. [0133]); receiving speech input ("...voice

input...," para. [0093]); converting the speech input to second machine-generated text ("...Speech recognizer 162 generates text data responsive to voice input from user 240 and provides the text data to editor 168...," para. [0045]), wherein the second machine-generated text is one of the alternative machine-generated text candidates and the list of machine-generated text candidates functions as a dictionary used for converting the speech input

> At step 1430, a list of alternative text comparable to the selection is provided. The list includes text segments that each received a high score (but not the maximum score) during hypothesis testing of the message recognizer. Two lists of alternative text of the type that may be produced at step 1430 are shown by way of example in TABLE IV and TABLE V below. As discussed below, the lists of TABLE IV and TABLE V were displayed in a correction mode of a conventional computer configured as a speech recognizer by executing conventional speech recognition software, marketed as NATURALLY SPEAKING, Preferred Edition, version 3.01, by Dragon Systems, Inc.

(para. [0132]); and replacing the first machine-generated text candidate with the second machine-generated text ("...desired modifications to text data generated by speech recognizer 162 in accordance with editing commands communicated by freehand input and interpreted by tablet interface 164....," para. [0097]) in accordance with a statistical language model ("...Probability $Pr(w.sub.iw.sub.j.vertline.V)$ may be computed (at least as an estimate) by any suitable statistical technique. For example, probability $Pr(w.sub.iw.sub.j.vertline.V)$ may be computed for a given combination of text segments $w.sub.i$ and $w.sub.j$ based on the total number of occurrence of segment wi in matrix Z, divided by the total number of occurrences of all segments in matrix Z.

1390, 163 USPQ 545, 549 (CCPA 1969).

The probability of shared cluster occurrence of text segments w.sub.i and w.sub.j may be estimated as the ratio between (1) the number of times text segments w.sub.i and w.sub.j can be paired together within semantic clusters of the corpus and (2) the total number of text segments in the corpus....," para. [0173]).

As to dependent **claim 2**, which depends from claim 1, *Suominen* further disclose(s): The method of claim 1, wherein the first machine-generated text candidate is a word ("...a word ...," para. [0004]).

As to dependent **claim 3**, which depends from claim 1, *Suominen* further disclose(s): The method of claim 1, wherein the first machine-generated text candidate is a portion of a word ("...text segments are referred to herein as "stop segments," and may include more or less text than a single word...," para. [0148]).

As to dependent **claim 4**, which depends from claim 1, *Suominen* further disclose(s): The method according to claim 1, further comprising receiving input selecting the first machine-generated text candidate prior to receiving the speech input ("...the selected text segment is modified responsive to the character input....," para. [0134]).

As to dependent **claim 5**, which depends from claim 4, *Suominen* further disclose(s): The method according to claim 4, wherein the selecting includes touching a user input device to a digitizer screen at a location corresponding to the first machine-generated text candidate ("...by stylus tap somewhere on the text...," para. [0092]).

As to dependent **claim 6**, which depends from claim 4, *Suominen* further disclose(s): The method according to claim 4, wherein the first machine-generated text candidate is a group of words or part of a word ("...a phrase of several words...," para. [0131]).

As to dependent **claim 7**, which depends from claim 1, *Suominen* further disclose(s): The method according to claim 1, further including displaying the list of machine-generated text candidates prior to receiving the speech input ("...the list of alternative text is updated, based on character data communicated after initiation of the correction mode...," para. [0133]).

As to dependent **claim 8**, which depends from claim 7, *Suominen* further disclose(s): The method according to claim 7, wherein said step of displaying the alternative machine-generated text candidates further includes displaying the alternative machine-generated text candidates in the list in an order based on a confidence level that each alternative machine-generated text candidate corresponds to the electronic ink input ("...The list includes text segments that each received a high score (but not the maximum score) during hypothesis testing of the message recognizer. Two lists of alternative text of the type that may be produced...," para. [0132]).

As to dependent **claim 9**, which depends from claim 1, *Suominen* further disclose(s): The method according to claim 1, wherein the alternative machine-generated text candidates include machine-generated text candidates based on the electronic ink input generated by a handwriting recognition engine ("...handwriting recognition engine...," para. [0042]).

As to dependent **claim 11**, which depends from claim 1, *Suominen* further disclose(s): The method according to claim 10, further comprising displaying the machine-generated text candidates generated by the handwriting recognition engine and subsequently displaying the machine-generated text candidates generated in accordance with the statistical language model ("...Language model 350 includes a syntactic model 352 and a semantic model 354. Syntactic model 352 provides a set of a priori probabilities based on a local word context, and may be a conventional N-gram model. Semantic model 354 provides probabilities based on semantic relationships without regard to the particular syntax used to express those semantic relationships....," para. [0146]).

As to dependent **claim 12**, which depends from claim 11, *Suominen* further disclose(s): The method according to claim 11, further comprising receiving input requesting the display of the machine-generated text candidates generated in accordance with the statistical language model while displaying the machine-generated text candidates generated by the handwriting recognition engine ("...Handwriting recognizer 314 then derives units of language (again, strings of text data) from the units of handwriting in accordance with language model 350....," para. [0145]).

As to dependent **claim 13**, which depends from claim 1, *Suominen* further disclose(s): The method according to claim 1, wherein the alternative machine-generated text candidates include text candidates based on the electronic ink input generated by a statistical language model ("...Probability Pr(w.sub.iw.sub.j.vertline.V) may be computed (at least as an estimate) by any suitable statistical technique. For

example, probability Pr(w.sub.iw.sub.j.vertline.V) may be computed for a given combination of text segments w.sub.i and w.sub.j based on the total number of occurrence of segment wi in matrix Z, divided by the total number of occurrences of all segments in matrix Z. The probability of shared cluster occurrence of text segments w.sub.i and w.sub.j may be estimated as the ratio between (1) the number of times text segments w.sub.i and w.sub.j can be paired together within semantic clusters of the corpus and (2) the total number of text segments in the corpus....," para. [0173]).

As to dependent **claim 14**, which depends from claim 1, *Suominen* further disclose(s): The method according to claim 1, wherein the step of converting the speech input to the second machine-generated text includes determining if the speech input corresponds to one of the alternative machine-generated text candidates ("...Speech recognizer 312 generates text data in accordance with <u>acoustic model</u> 356 and <u>shared language model</u> 350....," para. [0126])(emphasis added); and converting the speech input to the corresponding alternative machine-generated text candidate when the speech input corresponds to the alternative machine-generated text candidate ("...speech recognizer such as a computer executing the NATURALLY SPEAKING software, the modifications to the selected text segment are entered when the user selects an "OK" control of a displayed user interface dialog....," para. [0134]).

As to dependent **claim 15**, which depends from claim 1, *Suominen* further disclose(s): The method according to claim 1, wherein further comprising the step of receiving an input confirming that the second machine-generated text candidate should replace the first machine-generated text candidate prior to performing said step of

replacing (when the user selects an "OK" control of a displayed user interface dialog....,"

para. [0134]).

As to dependent **claim 16**, this claim differs from claim 1 only in that it is directed

to a product defined by the process of claim 1. Accordingly, this claim is rejected for the

same reasons set forth in the treatment of claim 1, above.

As to claim 17, *Suominen* further disclose(s):

> [0132] At step 1430, a list of alternative text <u>comparable</u> to the selection is
> provided. The list includes text segments that each received a high score
> (but not the maximum score) during hypothesis testing of the message
> recognizer. Two lists of alternative text of the type that may be produced
> at step 1430 are shown by way of example in TABLE IV and TABLE V
> below. As discussed below, the lists of TABLE IV and TABLE V were
> displayed in a correction mode of a conventional computer configured as a
> speech recognizer by executing conventional speech recognition software,
> marketed as NATURALLY SPEAKING, Preferred Edition, version 3.01,
> by Dragon Systems, Inc.

> [0133] At step 1440, the list of alternative text is updated, based on
> character data communicated after initiation of the correction mode. In a
> conventional speech recognizer such as a computer executing the
> NATURALLY SPEAKING software, the displayed list of alternative text
> changes as different characters are entered by a user using character
> input.

As to **claims 18-22, and 24-28**, these claims differ from claims 1-16,

respectively, only in that they are directed to objects whereas claims 1–16 are directed

to text. Since "text" is a type of object ("The machine-generated objects may correspond

to words, lines, and/or other groupings of machine-generated text.", see applicants

disclosure at para. [27]), claims 17–28, are rejected for the same reasons set forth in the

treatment of claims 1-16, respectively.

As to **claims 29–40**, these system claims differ from claims 1–15 in that they are directed to a system for carrying out the methods defined by claims 1-15. Accordingly, claims 29-40 are rejected for the same reasons set forth in the treatment of claims 1–15 above.

As to **claims 41-46, and 48-8**, these system claims differ from claims 29, 31, 34, and 36–40 in that they are directed to "objects" whereas claims 29, 31, 34, and 36–40 are directed to "text." Since "text" is a type of object ("The machine-generated objects may correspond to words, lines, and/or other groupings of machine-generated text.", see applicants disclosure at para. [27]), therefore, claims 41–48, are rejected for the same reasons set forth in the treatment of claims 29, 31, 34, and 36–40.

RESPONSE TO ARGUMENTS

7.   Applicant arguments, see pp. 14 filed 8/2/2007, with respect to the 35 U.S.C. §102(e) Rejections cited by the Examiner in the previous Office Action (Mail dated: 10/18/2007), have been fully considered but are not persuasive. Therefore, the rejection(s) have been maintained.

Applicant Argues (Applicant REMARKS, filed 3/18/2008, Page 14).,

> relied upon in the Office Action generated on October 18, 2007, the Examiner has indicated that the particular algorithm discussed in Souminen at step 1430, to generate a list of alternative text comparable to the selection is provided. This list includes text segments that each receive a high score (but not the maximum score) emphasis added during the particular testing. Clearly, since the amended limitation to the independent claim describes an algorithm by which a maximum constraint is employed visa vis the maximum score, clearly Souminen is no longer applicable to Applicants' claimed invention. In fact, the aspect of Souminen that employs a high score but not

In response, the examiner points to the following teaching:

> [0132] At step 1430, **a list of alternative text <u>comparable</u> to the selection is provided.** The list includes text segments that each received a high score (but not the maximum score) during hypothesis testing of the message recognizer. Two lists of alternative text of the type that may be produced at step 1430 are shown by way of example in TABLE IV and TABLE V below. As discussed below, the lists of TABLE IV and TABLE V **were displayed in a correction mode of a conventional computer configured as a speech recognizer** by executing conventional speech recognition software, marketed as NATURALLY SPEAKING, Preferred Edition, version 3.01, by Dragon Systems, Inc.

> [0133] At step 1440, the list of alternative text is updated, based on character data communicated after initiation of the correction mode. **In a conventional speech recognizer such as a computer executing the NATURALLY SPEAKING software, the displayed list of alternative text changes as different characters are entered by a user using character input.**

> [0156] A user context is the context of all documents generated by a particular user. A user context may also be viewed as a context of all documents generated by a group of users, such as members of a particular collaborative group. Examples of collaborative groups include project teams, institutions, corporations, and departments. Members of a collaborative group may share a common pool of stop segments. A stop segment designated by any member of the group as being outside his or her user context is then considered to be outside the user context of each group member. In one variation, a leader of the group may review a list of pooled stop segments and edit the list. In another variation, each group member may remove pooled user stop segments (at least from operation of message recognition responsive to his or her message input) that the member considers to be inside his or her particular user context.

Applicant Argues that *Suominen* does not disclose converting a speech input to machine-generated text based on the alleged text segments chosen from the corpus.

However, *Suominen* teaches that the list of machine-generated text candidates are generated based on electronic ink input, that is functioning as a dictionary for converting speech input:

> At step 1440, the list of alternative text is updated, based on character data communicated after initiation of the correction mode. In a conventional speech recognizer such as a computer executing the NATURALLY SPEAKING software, the displayed list of alternative text changes as different characters are entered by a user using character input.

(para. [0133]).

CONCLUSION

8.   Although not relied upon, the following prior art is made of record because it considered pertinent to applicant's disclosure:

Suominen, Edwin A.	US 20030055655 A1	Text processing system
Bangalore, Srinivas et al.	US 20040119754 A1	Context-sensitive interface widgets for multi-modal dialog systems
Bangalore, Srinivas et al.	US 20040122674 A1	Context-sensitive interface widgets for multi-modal dialog systems
Suominen, Edwin A.	US 20050171783 A1	Message recognition using shared language model
Bushey, Robert R. et al.	US 20050183032 A1	System and method for managing recognition errors in a multiple dialog state environment
Ditzik; Richard Joseph	US 6167376 A	Computer system with integrated telephony, handwriting and speech recognition functions

CONCLUSION

9.   All prior art made of record in this Office Action or as cited on form PTO-892 notwithstanding being relied upon, is considered pertinent to applicant's disclosure. Therefore, Applicant is required under 37 CFR §1.111(c) to consider these references fully when responding to this Office Action.

10.   Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Samir Termanini at telephone number is (571) 270-1047. The Examiner can normally be reached from 9 A.M. to 6 P.M., Monday through Friday.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Stephen S. Hong can be reached on (571) 272-4124. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Samir Termanini/   /Stephen S. Hong/
Examiner, Art Unit 2178   Supervisory Patent Examiner, Art Unit 2178